



Cyclone™ PAINT SHAKER

FOR PROFESSIONAL USE ONLY

IMPORTANT

Read and follow these instructions carefully to ensure proper operation and warranty protection of your New Paint Shaker. The limited warranty does not cover damage caused by neglect, abuse, or lack of lubrication.

WARNING

This Paint Shaker is intended for use only by trained professionals in industrial work areas where public and incidental access is prohibited. The manufacturer prohibits the sale or use for other purposes. The clear plastic sight tube below the oil drip speed adjustment knob on the automatic lubricator will crack and may break if exposed to certain solvents and synthetic oils. Use a standard petroleum 10W non-detergent rust inhibiting air tool oil, such as Conoco EP Rock Drill Oil 32, Lubriplate Rockwell 10R, or other air tool oil recommended for all air cylinders and air tools. Do not use motor oil. The oil should have neither gum and varnish removers nor petroleum distillates.

- NEVER USE SILICONE OILS OR GREASES IN A PAINT SHOP!
- DO NOT OPERATE ON COMPRESSED NITROGEN OR OTHER INERT GASES WITHOUT POSITIVE VENTILATION OF THE WORK AREA!

INSTALLATION

Bolt Shaker to Pedestal and bolt pedestal securely to floor. For concrete floors, use 3/8 inch (10 mm) machine bolts with expansion bolt anchors. Shaker may be bolted to a bench or table top, however, the bench must be rigid or it will be shaken apart. Drill a drain hole in the bench top for condensation drainage. (See "MOUNTING DIMENSIONS".) Seal housing to Pedestal top plate or bench top with elastomeric sealant. Mount lubricator to shop air piping and connect Shaker using 1/4 inch (4 mm) inside diameter air hose not over four feet (1.2 meters) long. Hose must be rated for 200 PSI (1300 kPa) or higher working pressure. Connect as shown by Figure 2. IF there is much moisture or any dirt in airline, install a filter-separator as shown by Figure 2. BE SURE TO INSTALL LUBRICATOR WITH "INLET" - "OUTLET" OR ARROW IN THE DIRECTION OF FLOW! Install a quick connector upstream of Control Valve to allow manual lubrication if Lubricator clogs up.

Fill lubricator with air tool oil meeting specifications. Unscrew lubricator bowl from body by hand. Bowl seal ring in lubricator body must be present for lubricator to work. After filling to level mark, screw bowl on straight to avoid cross threading. Ensure lubricator adjustment knob is open. FORCE WILL DAMAGE LUBRICATOR! Some lubricators have a red locking ring on the knob, which is pulled up for adjustment, pushed down to lock. Knob will stop turning at full closed (clockwise) and full open (counterclockwise) positions. DO NOT FORCE! Temporary or portable installations can be made by bolting the shaker and pedestal to a 14 or 15 inch wheel and tire having a five-bolt mounting pattern on a 4 3/4 or 5 inch bolt circle. (See "MOUNTING DIMENSIONS".) The Lubricator may be mounted directly to the Shaker (see Figure 1), or, a quick connector may be installed at the Control Valve and the Shaker lubricated by hand; squirt a few drops of oil into the quick connector plug before each use.

OPERATION

Clamp can firmly, but avoid crushing can. Clamp mostly empty cans and aerosol cans with lids toward clamp handle. Clamp square gallons lid up, long sides against clamp jaws, corners resting on jaw cradles. Tighten square gallons securely with can straight up.

Watch square gallons and aerosol cans while shaking to make sure they don't leak or come loose.

Start and stop shaker by opening and closing control valve quickly, about 1/4 turn. IF shaker stops exactly at center position or is not getting enough oil, it may not start automatically. Pull can clamp quickly to one side and let go to start or close control valve, cock can clamp to one side and re-start.

Adjust lubricator by pulling up red locking ring (on gold colored lubricators only) and open (turn counterclockwise), or closing (turn clockwise) oil drip rate adjustment knob or screw on top of lubricator until oil is dripping from the drip spout inside the clear plastic sight tube beneath the adjustment knob. Adjust the oil drip rate as follows:

BLACK LUBRICATORS: 1 DROP EVERY 15-20 SECONDS.

SILVER OR GOLD LUBRICATORS: 1 DROP EVERY 15-20 SECONDS.

NOTE: Each time the Shaker is started, lubricator may take a few seconds to start dripping oil. Do not force the adjustment knob or screw. It stops when fully open and when closed. If oiler is not working, check oil level and see "TROUBLESHOOTING". Check oil level once a week (more often for heavy-duty); Unscrew lubricator bowl and dump watery/milky oil out. Refill to level mark with air tool oil and carefully reinstall. Make sure bowl gasket ring is in place and screw bowl on straight. NOTE: mounted directly to shaker. Set feed rate at light load and reduced speed and unscrew bowl and check oil level after several hours to ensure level is dropping and oil is feeding. Check/adjust shake angle if air pressure at shaker is over 120 PSI (780 kPa) as follows: With air line at maximum normal pressure, a) Clamp up a full one-gallon round can of paint; b) Start shaker; c) Loosen 3/8-inch lock nut at Adjustment Screw on Air Inlet Fitting and adjust screw to obtain a total shaking angle of motion of about 30° (see Figure 3.); d) Stop shaker and tighten lock nut while holding adjustment. Grease or relubricate clamp screw and both grease zerks fittings once every three months (more often in severe duty/outdoor/dirty areas). Grease crank pin zerk (one shot) through vent hole when can clamp is rotated left to stop. Dry lube clamp frame. Use more air oil to avoid internal rust if you have heavy air line moisture, and install a filter. Check lubricator is oiling each time you stop shaker.

IMPORTANT

EMPTY THE ENTIRE CONTENTS OF THE CONTAINER OF AIR TOOL OIL SUPPLIED WITH THIS CYCLONE PAINT SHAKER INTO THE BOWL OF THE LUBRICATOR BEFORE USING THE SHAKER.

SPECIFICATIONS

Air Pressure: 90 to 130 PSI (lbs./in² gage) (600 to 1200 kPa).

Line pressure over 175 PSI requires regulator and relief valve upstream of air hose.

Air Inlet Threads: 1/4-inch PTF (Seal with thread tape or thread sealant).

Air Consumption: Approximately 4.3 CFM (0.002 M³/sec) free air with 1 gallon (U.S.) 12 lb. Can at 30° shake angle.

Speed: Up to 700 cycles/minute at 30° shake angle.

Adjustable at control valve, automatically compensates for can size.

Shake Angle: If operating at over 120 PSI pressure, must be set to 30° with full gallon can clamped, air at maximum normal line pressure. (See "OPERATION".)

Capacity: Pints through 4 liter round cans, including gallons, Imperial gallons, most aerosols (with caps) and square gallons. Up to 16 lbs. gross can weight. Takes 1/4 and 1/2 pints stacked or with spacer.

Recommended Oil: Petroleum 5W to 10W Non-detergent Rust Inhibiting Air Tool Oil such as Lubriplate Rockwell 10R. Oil should contain no gum removers or petroleum distillates. ***Do not use motor oil.***

Weight: Shipping weight: Shaker, 20 lbs.; Pedestal, 14 lbs.

Recommended Shake Time: Refer to your paint manufacturers recommendation.

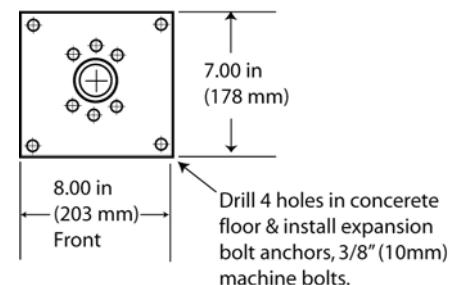
Final Filter: Bronze, spring-retained 40 micron element behind Inlet Ell.

Grease: Multipurpose calcium or lithium-based chassis grease. Re-lubricate every 3 to 6 months, more often in severe service.

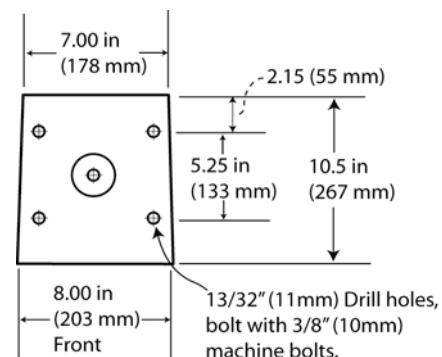
Oil Consumption: 3 drops air tool oil at air inlet before every use, or install automatic lubricator and set oil drip rate per "ADJUST LUBRICATOR". (See "OPERATION".) 10 minutes maximum operation between manual oiling.

MOUNTING DIMENSIONS

MOUNTING PEDESTAL TO FLOOR



MOUNTING SHAKER TO BENCH (Requires rigid, heavy bench)



Drill extra hole for oil & water drainage.

REMEMBER

- ★ Bolt your Cyclone down securely
- ★ Seal shaker to pedestal with elastic sealant
- ★ Provide drainage hole if bench top mounted
- ★ Mount lubricator on wall pipe if possible
- ★ Keep lubricator-to-shaker hose under 4 ft. long
- ★ Install filter if there's water/dirt in air line
- ★ Fill lubricator bowl with air tool oil & set flow per instructions
- ★ Avoid air line low spots (water traps)
- ★ Cock clamp to one side to ensure auto start
- ★ Be sure shaker gets enough air tool oil
- ★ Don't force lubricator adjustment knob
- ★ Adjust shake angle to 30° total with 1 gallon can if air pressure is 120 PSI or more.



TROUBLESHOOTING

SHAKE ANGLE TOO LARGE:

- Can over 16 lbs. or catalyzed solid
- Adjust shake angle

RUNS TOO SLOW OR STOPS:

- Starved for oil, or fouled with motor oil
- Air pressure low
- Air supply restricted
- Inlet filter or control valve blocked
- Final filter element clogged (replace)
- Relief valve stuck open (clean or repair)
- Valve discs dirty
- Seals missing or damaged

HARD STARTING:

A. Compression OK, Motor free:

- Broken wear ring/bad piston seal (oil starvation)
- Dirty or gummed up disc in valve body
- Shaker being turned on too slowly, dead centering
- Angle adjustment screw turned in too far
- Air contamination (residue, excess water)

B. Compression OK, Motor dragging*:

- Not enough air oil, improper oil

C. Very Low Compression, Motor Free:

- Bad piston seal (oil Starvation)
- Broken/loose piston/rod end, crank arm
- Not enough oil to seal valve discs
- Leaky/stuck relief valve

LUBRICATOR WON'T WORK:

- Out of oil
- Clogged drip passage (remove bowl & blow air through tube)
- Excess vibration preventing drip visibility
- Air leak in oiler body or bowl
- Missing bowl gasket or fill screw O-Ring
- Knob turned closed, adjust oil rate
- Bowl threads damaged
- Installed backwards

DAMAGE/HIGH MOTION AT SHOCK MOUNT BUSHING:

- Shake angle needs adjustment to 30°
- Can over 16 lbs. or catalyzed solid
- Dirty/jammed disc in valve body
- Shock mount not pre-loaded properly
- Inner shock mount bushing damaged

NOISY OPERATION:

- Can clamp loose
- Can lids flexing ("oil canning")
- Bad bearing
- Damaged/broken parts or seals
- Bottom of shaker housing open to room
- Missing O-ring or reversed rod seal

USES EXCESS AIR:

- Shake angle too large, adjust to 30°
- Relief valve stuck or broken
- Bad piston seal or rod seal (oil starvation)

LEAKS OIL:

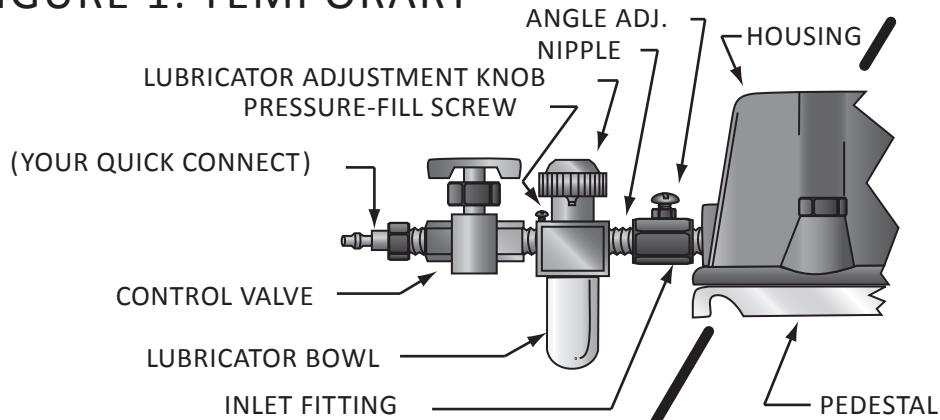
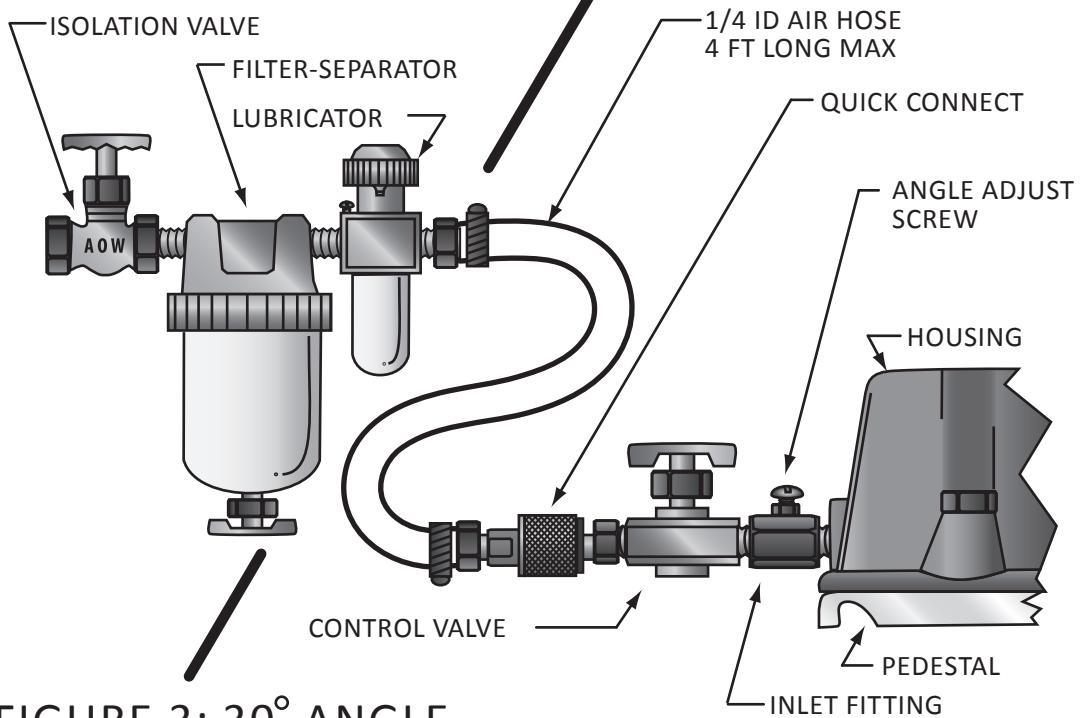
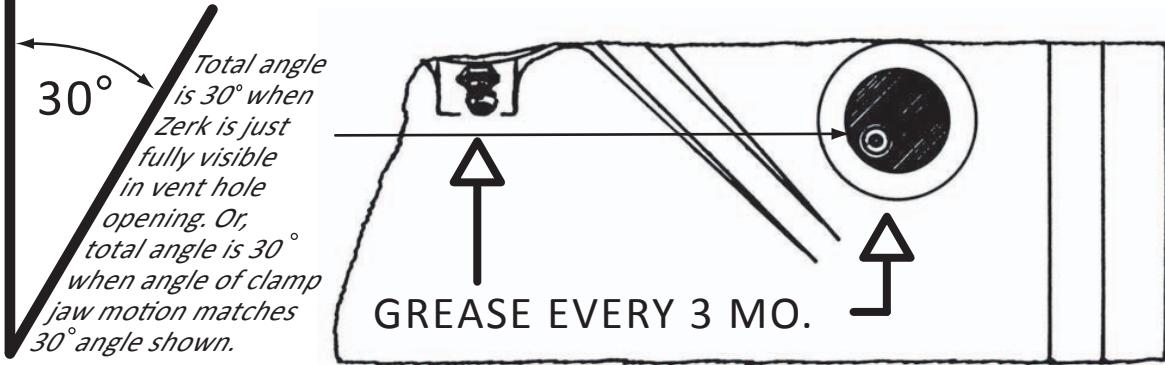
- Housing not sealed to pedestal. Reseal: apply sealant all around bolt holes.
- Lubrication Adjuster opened too much.

Torque Specifications & Assembly Notes

ITEM	TORQUE	THREAD LUBE	REMARKS
Piston Screw & Rod End	20-25 Lb. Ft. (277-346 Kg. cm)	Thread Lock*	Heat to 350° F (177° C) to disassemble
Relief Valve & Jam Nut	15 Lb. Ft. MAX** (17 Kg. cm MAX)	None	Adjust to leave one nut thickness threads exposed
Inlet Ell	5 Lb. Ft. (69 Kg. cm)	Thread Seal	
Cylinder Stud	5 Lb. Ft. (69 Kg. cm)	Thread Lock	
Cylinder Stud & Jam Nuts	15 Lb. Ft. (Jam) (208 Kg. cm)	None	Tighten until Shock Bushing swells to washer diameter
Crank Arm	28 Lb. Ft. (388 Kg. cm)	None	Nut away from Housing Wall
Inlet Fittings	15 Lb. Ft. (208 Kg. cm)	Thread Lock	
U-Bolt Nuts	28 Lb. Ft. (388 Kg. cm)	Oil, Torque evenly	Level U-Bolt the torque
Jaw Bolt Nuts	15-18 Lb. Ft. (208-249 Kg. cm)	None	Shim Jaws to Obtain Clearance
Cylinder	N/A (Ret. Ring)	N/A	Disassembly: Remove Retaining Ring & pull all internals together with rod end.
Rod End	20 Lb. Ft.	Thread Lock	Remove seals & heat in oven to 450° F to break thread lock. Install new rod seal when reassembling.

All parts must be completely clean & lubricated before assembly or rapid wear may result.

*NOTE: Thread Seal: Non-hardening gasket cement (Permatex "Aviation Form-A-Gasket" or equal). Thread Lock: Lubricating, anaerobic hardening thread locking compound (Loctite 271, "Stud-N-Bearing Mount", or equal). **(One lb. in. equals 1/12 of one lb. ft.).

FIGURE 1: TEMPORARY

FIGURE 2: PERMANENT

FIGURE 3: 30° ANGLE




Q. Is the shaker approved for hazardous areas?
A. Yes, the Cyclone shaker will work in all areas.

Q. What is the speed or RPM of the shaker?
A. The shaker operates at 100 rpm to 700 RPM.

Q. What is the warranty covering the shaker parts and labor?
A. There is a three year limited warranty for parts and labor on the Cyclone Shaker.

Q. How long should I shake the paint?
A. Refer to your paint manufacturers recommendation.

Q. What size cans can be shaken on the Cyclone Shaker?
A. The Shaker accommodates Pints, Gallons, Imperial Gallons, Aerosols, Rectangular Gallons, Half Liter, One Liter, Four Liter, and some Five liter cans.

Q. Can the speed of the shaker be adjusted to slow it down or speed it up?
A. Yes, the Cyclone Air shaker speed is adjustable.

Q. What is the maximum weight recommended for the shaker during operation?
A. Approximately sixteen pounds.

Q. How tight should the U-bolts on the can clamp be tightened?
A. The U-bolt nuts should be tightened to 28 ft. lbs (388 kg. cm.) of torque.

Q. Does the shaker require a pedestal to mount it to or can I mount it on a bench?
A. It can be mounted in either way. The optional Pedestal has a built in condensation trap and can be bolted to a wheel and tire or directly to the floor.

Q. What kind of oil should I use to refill my Cyclone Shaker?
A. Use a standard petroleum 10W non-detergent rust inhibiting air tool oil, such as Conoco EP Rock Drill Oil 32, Lubriplate Rockwell 10R, or other air tool oil recommended for all air cylinders and air tools.

Q. What are the dimensions of the Cyclone Shaker and Pedestal?
A. Shaker: 8" W X 10.5" D X 14" H (21 cm W X 27 cm D X 36 cm H) Weight: 20 lbs (9 kgs.)
Pedestal: Height: 31" (79 cm) Weight: 15 lbs (7 kgs)

Q. What is included in the M-232RK Repair Kit?
A. (1) - M-264 Wear Ring, (1) - M-296 Check Valve Disc, (1) - M-305 Inlet Filter,
(1) - M-298 Valve Body O-Ring, (2) - M-293 Transfer Body O-Ring, (1) - M-266 Head O-Ring,
(1) - M-265 Piston O-Ring, (1) - M-263 Shock Bushing, (2) - M-310 Hose Clamp,
(1) - M-297 Valve Disc, (1) - M-311 Air Hose.



Cyclone Shaker Parts List

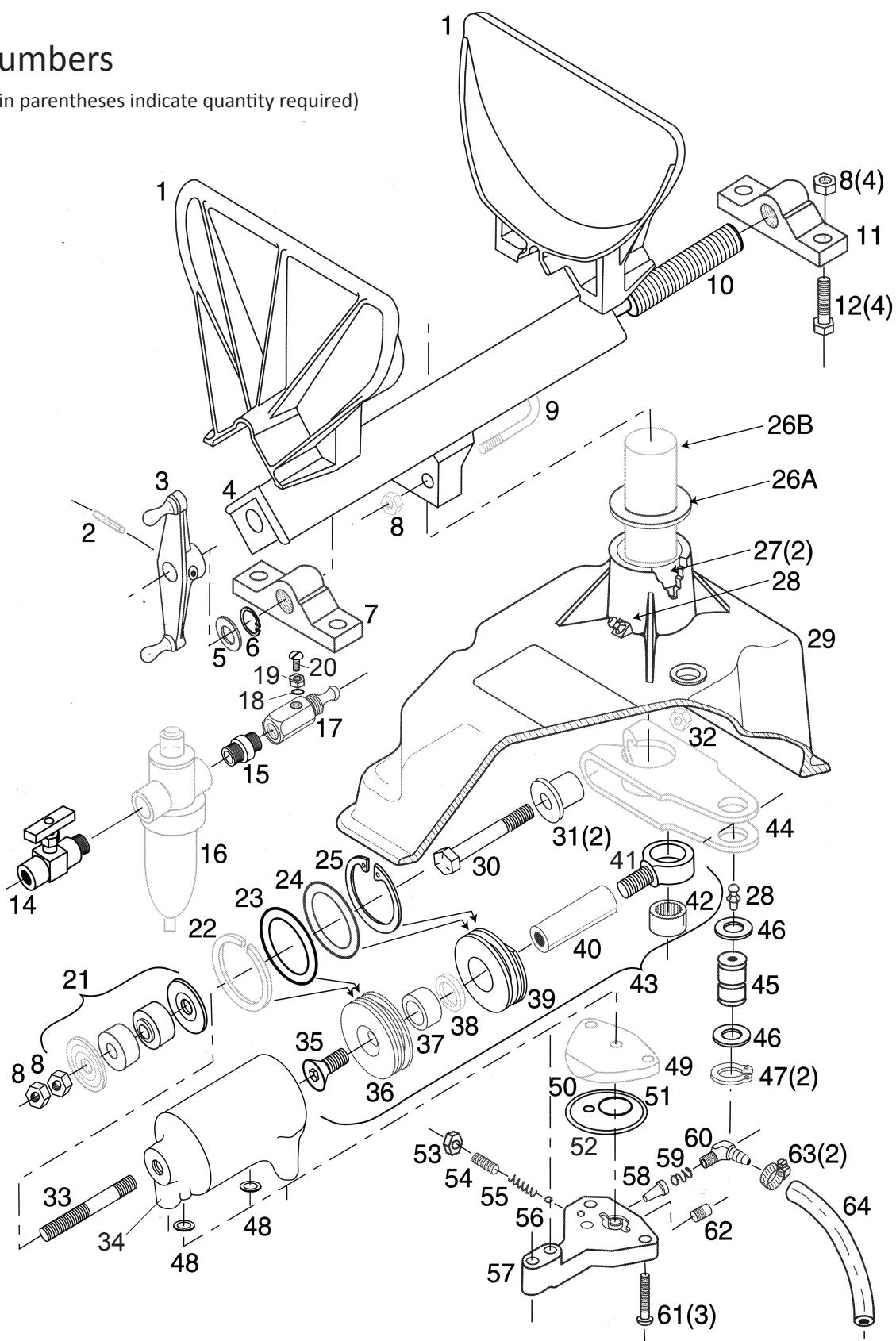
Cyclone™

<u>Part No.</u>	<u>Description</u>	<u>Key No.</u>	<u>Part No.</u>	<u>Description</u>
01	M-244		40	M-285
02	M-245		41	M-286
03	M-246		42	M-287
04	M-247	Clamp Frame Weld	43	M-288
05	M-248	Thrust Washer		Cylinder Internal Assembly
06	M-249	Screw Retaining Ring	(Includes: 22, 23, 24, 35, 36, 37, 38, 39, 40, 41, 42)	
07	M-250	Clamp Nut Left Hand	44	M-289
08	M-251	3/8-16 Nut	45	M-290
09	M-252	U-Bolt	46	M-291
10	M-253	Clamp Screw	47	M-292
11	M-254	Clamp Nut Right Hand	48	M-293
12	M-255	Jaw Bolt	49	M-294
14	M-257	Control Valve (Blue or Black Handle)	49A	M-295
15	M-240	Brass Close Nipple		Inlet Valve Body Assembly
16	M-318	Lubricator Component	(Includes: 49, 50, 51, 52)	
17	M-242	Inlet Fitting	50	M-296
17A	M-243	Inlet Fitting Assembly	51	M-297
		(Includes: 17, 18, 19, & 20)	52	M-298
18	M-260	Adjustable Seal	53	M-299
19	M-261	Adjustable Jam Nut	54	M-300
20	M-262	Adjustable Screw	55	M-301
21	M-263	Shock Mount Bushing (Four Pieces)	56	M-302
22	M-264	Wear Ring	57	M-303
23	M-265	Piston O-Ring	57A	M-304
24	M-266	Head O-Ring		Outer Valve Body Assembly
25	M-267	Head Retaining Ring	(Includes: 53, 54, 55, 56, 57, 58, 59, 60, 62)	
26A	M-268	Main Thrust Washer	58	M-305
26B	M-270	Main Shaft	59	M-306
27	M-271	Main Bearing	60	M-307
28	M-272	Zerk Fitting	61	M-308
29	M-273	Housing Assembly with Bearings	62	M-309
		(Includes Housing assembly and part 27 x 2)	63	M-310
30	M-274	Crank Arm bolt	64	M-311
31	M-275	Bolt Bushing		M-312
32	M-276	Crank Arm Nut		Instruction Sheets
33	M-277	Cylinder Stud		M-313
34	M-278	Cylinder Body		Housing Bolt
35	M-279	Piston Screw		M-314
36	M-280	Piston		Drain Fitting
37	M-281	Rod Bearing		M-232RK
38	M-282	Rod Seal		Repair Kit
39	M-283	Cylinder Head	(Includes: 21, 22, 23, 24, 48 x 2, 50, 51, 52, 58, 63 x 2, 64)	
39A	M-284	Front Cylinder Head Assembly		M-231
		(Includes: 24 & 39)		Cyclone with Pedestal
				M-232
				Cyclone Paint Shaker
				M-233
				Cyclone Pedestal
				M-315
				Can Clamp Assembly
			(Includes: 01 x 2, 02, 03, 04, 05, 06, 07, 08 x 6, 09, 10, 11, 12 x 4)	
				M-316
				Cylinder Motor Assembly
			(Includes: 33, 34, 43, 48 x 2, 49A, 57A, 61 x 3)	
				M-317
				Motor with Crank Arm
			(Includes: 28, 30, 31 x 2, 32, 44, 45, 46 x 2, 47 x 2, M-316)	

For technical support on our products or additional accessories, please call us at 248-624-7710 or visit our web site: www.dedoes.com

Key Numbers

(Numbers in parentheses indicate quantity required)





Cyclone Shaker Maintenance Schedule



It is recommended to grease/lubricate the Cyclone Shaker every three months and check the oil once a week. Use Non detergent Air Tool Oil 5W to 10W to refill the Cyclone Shaker.